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Measurement of Neutrino Oscillations with the ANTARES detector

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The data taken with ANTARES from 2007 to 2010 with a total lifetime of 830 days have been analysed in view of a possible neutrino oscillation signal. The flux of vertical upward going muon neutrinos should be completely suppressed at energies of 24 GeV due to neutrino oscillations.

A dedicated algorithm is used, which allows the reliable reconstruction of muon tracks with energies as low as 20 GeV. The oscillation signal is extracted by comparing two event samples: a low energy sample of vertical upward going tracks seen on a single detector line and a higher energetic set of more isotropic events seen on several detector lines. The presentation will detail the analysis method, the estimation of systematic effects and the result of the measurement of the oscillation parameters.

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